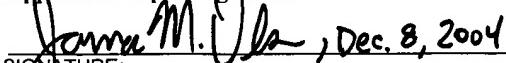


FORM PTO 1390 (REV 10-2003)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 10354*1
<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371</b>				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) <b>10/517224</b> Not Yet Assigned
INTERNATIONAL APPLICATION NO. PCT/US2003/20259	INTERNATIONAL FILING DATE 24 June 2003	PRIORITY DATE CLAIMED 24 June 2002		
TITLE OF INVENTION <b>HARDWARE IMPLEMENTATION OF THE PSEUDO-SPECTRAL TIME DOMAIN METHOD</b>				
APPLICANT(S) FOR DO/EO/US John R. HUMPHREY et al.				
<p>Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:</p> <ul style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing 35 U.S.C. 371.</li> <li>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371 (f)). The submission must include items (5), (6), (9) and (21) indicated below.</li> <li>4. <input checked="" type="checkbox"/> The US has been elected (Article 31).</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c)(2)) <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li> <li>c. <input checked="" type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ul> </li> <li>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371 (c)(2)). <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto.</li> <li>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</li> </ul> </li> <li>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3)) <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input checked="" type="checkbox"/> have not been made and will not be made.</li> </ul> </li> <li>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).</li> <li>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).</li> <li>10. <input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).</li> </ul> <p><b>Items 11 to 20 below concern document(s) or information included:</b></p> <ul style="list-style-type: none"> <li>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>13. <input type="checkbox"/> A preliminary amendment.</li> <li>14. <input checked="" type="checkbox"/> An Application Data Sheet under 37 CFR 1.76.</li> <li>15. <input type="checkbox"/> A substitute specification.</li> <li>16. <input checked="" type="checkbox"/> A power of attorney and/or change of address letter.</li> <li>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821 - 1.825.</li> <li>18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</li> <li>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</li> <li>20. <input checked="" type="checkbox"/> Other items or information: Verified Statement Claiming Small Entity Status</li> </ul>				

U.S. APPLICATION NO. (if known, see 37 CFR 1.4)		INTERNATIONAL APPLICATION NO.	ATTORNEY'S DOCKET NUMBER																					
<b>10/517224</b> Not Yet Assigned		PCT/US2003/20259	10354*1																					
21. <input checked="" type="checkbox"/> The following fees are submitted:		CALCULATIONS PTO USE ONLY																						
<b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) – (5)):</b>																								
<input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... \$1080.00																								
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... \$920.00																								
<input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$790.00																								
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$730.00																								
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) ..... \$100.00																								
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>		\$ 790.00																						
Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).		\$																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CLAIMS</th> <th>NUMBER FILED</th> <th>NUMBER EXTRA</th> <th>RATE</th> </tr> </thead> <tbody> <tr> <td>Total claims</td> <td>20-20 =</td> <td>0</td> <td>x \$ 0.00</td> </tr> <tr> <td>Independent claims</td> <td>4-3 =</td> <td>1</td> <td>x \$ 88.00</td> </tr> <tr> <td colspan="2">MULTIPLE DEPENDENT CLAIM(s) (if applicable)</td> <td>+</td> <td>\$</td> </tr> <tr> <td colspan="2"></td> <td></td> <td style="text-align: right;">TOTAL OF ABOVE CALCULATIONS =</td> <td style="text-align: right;">\$ 878.00</td> </tr> </tbody> </table>		CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	Total claims	20-20 =	0	x \$ 0.00	Independent claims	4-3 =	1	x \$ 88.00	MULTIPLE DEPENDENT CLAIM(s) (if applicable)		+	\$				TOTAL OF ABOVE CALCULATIONS =	\$ 878.00		
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MULTIPLE DEPENDENT CLAIM(s) (if applicable)		+	\$																					
			TOTAL OF ABOVE CALCULATIONS =	\$ 878.00																				
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by ½.		\$ 439.00																						
<b>SUBTOTAL =</b>		\$ 439.00																						
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492 (f)).		\$																						
<b>TOTAL NATIONAL FEE =</b>		\$ 439.00																						
Fee for recording the enclosed assignment (37 CFR 1.21 (h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property		+ \$ 40.00																						
<b>TOTAL FEES ENCLOSED =</b>		\$ 479.00																						
		Amount to be refunded:	\$																					
		charged:	\$																					
<p>a. <input checked="" type="checkbox"/> A check in the amount of \$ 479.00 to cover the above fees is enclosed.</p> <p>b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.</p> <p>c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 03-2775. A duplicate copy of this sheet is enclosed.</p> <p>d. <input type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. <b>Credit card information should not be included on this form.</b> Provide credit card information and authorization on PTO-2038.</p>																								
<p><b>NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.</b></p>																								
SEND ALL CORRESPONDENCE TO: James M. Olsen CONNOLLY BOVE LODGE & HUTZ LLP The Nemours Building – 8th Floor 1007 North Orange Street P.O. Box 2207 Wilmington, Delaware 19899 (302) 658-9141 CUSTOMER NUMBER: 23416																								
 SIGNATURE: James M. Olsen NAME _____ 40,408 REGISTRATION NUMBER _____																								

10/517224  
DT05 Rec'd PCT/PTO 08 DEC 2004

Application No. (if known):

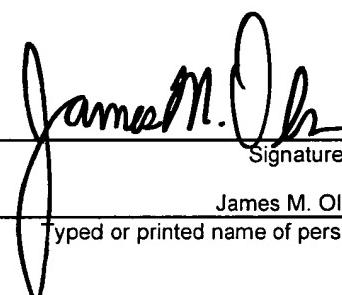
Attorney Docket No.: 10354\*1

## Certificate of Express Mailing Under 37 CFR 1.10

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail, Airbill No. **ER 644522188 US** in an envelope addressed to:

Mail Stop PCT  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

on December 8, 2004  
Date

  
\_\_\_\_\_  
Signature

\_\_\_\_\_  
James M. Olsen  
\_\_\_\_\_  
Typed or printed name of person signing Certificate

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

Return Postcard  
Check for \$479.00  
Transmittel Letter (2 pages)  
Specification (14 pages)  
Drawings (1 sheet)  
Application Data Sheet (2 pages)  
Recordation Form Cover Sheet (1 page)  
Assignment (3 pages)  
Combined Declaration and Power of Attorney (2 pages)  
Verified Statement Claiming Small Entity Status (2 pages)  
Information Disclosure Statement (2 pages)  
Form 1449 (2 pages) with references